AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

117-133.(cancelled)

134.(currently amended) The method according to claim [117] 143, wherein said precursor film is formed, alone or in combination, by RF sputtering, DC sputtering, magnetron sputtering, thermal evaporation, electron beam evaporation, pulsed laser deposition, physical vapor deposition, metal organic deposition, spin coating, screen printing, spray coating, dip coating, chemical vapor deposition, metal organic chemical vapor deposition, plasma spraying.

135-142.(cancelled)

143.(previously presented) A method of forming a film of crystalline $YBa_2Cu_3O_7$ comprising:

forming a precursor film comprising barium (Ba), fluorine (F), yttrium (Y) and copper (Cu);

heat-treating said precursor film at a temperature above about 700°C in the presence of oxygen and water vapor at sub-atmospheric pressure to form a crystalline structure; and

annealing said crystalline structure in the presence of oxygen.

144.(previously presented) The method according to claim 143 wherein said precursor film is formed on a substrate.

145.(previously presented) The method according to claim 144, wherein said substrate is a ceramic or a metal, alone or in combination.

146.(previously presented) The method according to claim 145, wherein said substrate is $SrTiO_3$.

147.(previously presented) The method according to claim 145, wherein said substrate is CeO_2.

148.(previously presented) The method according to claim 145, wherein said substrate is chosen from the group MgO, $LaAlO_3$, Yttrium Stabilized Zirconia, ZrO_2.

149.(previously presented) The method according to claim 145, wherein said substrate is chosen from the group Nickel, Ag, alloys comprising Nickel, alloys comprising Ag.

150.(previously presented) The method according to claim 144 wherein said substrate is substantially single crystal.

151.(previously presented) The method according to claim 143 wherein said heat-treating temperature is from about 700°C to about 900°C.

152.(previously presented) The method according to claim 143 wherein said heat-treating atmosphere comprises oxygen and water vapor and nitrogen.

153.(previously presented) The method according to claim 143 wherein said oxygen pressure during heat-treating is about 1 Torr or less.

154.(previously presented) The method according to claim 143 wherein said oxygen pressure during heat-treating is about 0.3 Torr or less.

155.(previously presented) The method according to claim 143 wherein said oxygen partial pressure during heat-treating is about 0.2 Torr or less.

156.(currently amended) The method according to claim 143 wherein said $YBa_2Cu_3O_7$ film has a resistivity of from about [100] 300 to about 600μOhm-cm at room temperature.

157.(cancelled)

158.(previously presented) The method according to claim 143 wherein during said heat-treating said $YBa_2Cu_3O_7$ film grows at a rate of from about 2.5 to about 20 Angstroms per second.

159.(previously presented) The method according to claim 143, wherein said $YBa_2Cu_3O_7$ film has a thickness of at least about 0.5 microns.

160.(previously presented) The method according to claim 143, wherein said $YBa_2Cu_3O_7$ film has a critical current density measured at 77 K of from about 0.1 MA/cm^2 or greater in zero magnetic field.

161.(previously presented) The method according to claim 143, wherein said precursor film is formed on a substrate comprising $SrTiO_3$.

162.(previously presented) The method according to claim 143 wherein said precursor film is formed, alone or in combination, by magnetron sputtering, electron beam evaporation, spin coating, dip coating, chemical vapor deposition, metal organic chemical vapor deposition.

163.(previously presented) The method according to claim 143, wherein said crystalline structure is annealed at a temperature of from about 700°C. to about 900°C.

164.(previously presented) The method according to claim 143 wherein said oxygen gas is oxygen.

165.(cancelled)

166.(currently amended) The method according to claim [143] 170 wherein said alkaline earth element is chosen, alone or in combination, from the group calcium (Ca), strontium (Sr), barium (Ba).

167.(currently amended) The method according to claim [143] 170 wherein said rare earth element is chosen, alone or in combination, from the group lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb).

168.(currently amended) A method of forming a film of crystalline (Rare Earth)$Ba_2Cu_3O_7$ comprising:

forming a precursor film comprising barium (Ba), fluorine (F), yttrium (Y) and copper (Cu); and rare earth element chosen, alone or in combination, from the group lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb);

heat-treating said precursor film at a temperature above about [500] 700°C. in the presence of oxygen and water vapor at sub-atmospheric pressure to form a crystalline structure; and

annealing said crystalline structure in the presence of oxygen.

169.(previously presented) The method according to claim 168 wherein said precursor film is formed on a substrate.

170.(previously presented) A method of forming a film of crystalline superconductor of the approximate composition (Rare Earth)$_1$(Alkaline Earth)$_2Cu_3O_7$ comprising:

forming a precursor film comprising at least one rare earth element, at least one alkaline earth element, fluorine (F), and copper (Cu);

heat-treating said precursor film at a temperature above about 700°C in the presence of oxygen and water vapor at sub-atmospheric pressure to form a crystalline structure; and

annealing said crystalline structure in the presence of oxygen.